

# The Winged Magneto-navigators!!

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Demoiselle crane (*Grus virgo*) is a native of Eurasia and migrates to India in winters

**L**AO Tzu once said, “A journey of a thousand miles begins with a single step.” That idea really fits well when we think about birds: the true aviators of nature. Birds are full of surprises, but one thing that has kept scientists scratching their heads for ages is “how do they use their wings?” And, more impressively, “how they manage to navigate huge distances with such precision, all without any gadgets or GPS?”

Since time immemorial, numerous studies have been conducted, and various observations have been made to analyse how the birds find their way to their foraging ground and back to their nests. Especially, in the case of the migratory birds who travel vast distances each year in search of food, nesting, and to protect themselves from extreme weather conditions, and then returning to the same breeding grounds year after year. Well, now we will further dig into the science behind how birds navigate, the sensory tools they use along the way, and what all this tells us about migration in the animal kingdom.

## Magneto-navigators in the Ancient and Medieval Era

People have relied on birds for navigation for a long time, but pigeons really stand out as the first messengers. Back

in ancient Egypt, around 1350 BCE, people used pigeons to carry messages. The Greeks and Romans did the same, especially for military communication or sending messages between cities. The homing instinct of the pigeons was well known in the ancient and medieval eras. Apart from pigeons, ravens, gulls and many seabirds were also widely used for navigational purposes by humans.

One of the oldest recorded histories of the navigatory skills of the birds in ancient and medieval India was from the Mughal Empire. Also, there were many instances in the documented history that the people during the ancient and medieval era successfully unravelled the mystery that the pigeons were using a combination of olfactory cues to locate their position and also used the position of the sun as a compass to correctly navigate in the right direction.

## The Earth’s Magnetic Field

The effect of the Earth’s magnetic field on the migration of birds and animals was first documented in the 1950s. The group of researchers, while documenting the behaviour of birds during different times of the year, observed that birds which were held in a room would shift to certain areas during specific times of the year. On further investigation, they were of the